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Veterinary Practice, Present and Future*

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The veterinary profession has made great progress since 1930 in all its branches, and nowhere has this been more marked than in research. But there has been considerable cause for complaint at the time lag between laboratory discoveries and their application on the farm. This has given rise to some misgivings, both within and without the profession, and the view has been expressed that we were loath to take early advantage of the benefits of research. This suggestion is not justified. It must be appreciated that the profession is judged in the eyes of the community by the ability and efficiency of the individual member and consequently it is imperative that each and every one of us should take full and prompt advantage of all that scientific research and endeavour can offer. The work of Sir John Lewis in human medicine demonstrates the great value of true clinical research. Each and every practitioner can make his contribution, in some degree, to veterinary clinical research, a field where there is great scope for progress. The value of clinical observation is still not fully appreciated; it applies not only to disease conditions, but to the observations of animal behaviour, under different types of environment and management. This is particularly important at the present time with reference to the somewhat obscure metabolic conditions arising in cattle and other stock grazing on leys and reseeded pastures, practices likely to become a more or less permanent feature of the agricultural economy of the future. While the treatment of individual animals is of considerable moment and urgency, that wider conception of veterinary practice which accepts responsibility for the maintenance of health and prevention of disease within the herd or flock, and for the production of the maximum quantity of higher quality foodstuffs of animal origin free from any disease risk to the consuming public, is ours in the future.

Disease control is of paramount importance and is an obvious prerequisite to eventual eradication. Co-ordination of effort must exist and it would be freely accepted that this must be effected by the appropriate department of the State. The practitioner has his part to play in the application of the requisite measures on the farm, where his intimate knowledge of the locality, of conditions and management on individual farms, and of the farmers themselves, can be a great asset to successful application of the measures devised for disease control or eradication. The client-practitioner relationship is one implying mutual confidence of which every advantage should be taken. The State department has a great responsibility in ensuring the standardization, the potency and efficacy of the biological or chemotherapeutic products recommended and in the elaboration of new techniques, in the direction of research, and its translation to the farm. It has been contended by a very small minority that control and eradication of disease will eventually limit the work of the veterinary surgeon in the field. I believe this to be a groundless fear, since it would appear obvious that such schemes demand persistent veterinary services and that successful application tends to bring to light, or rather to the notice of the veterinary practitioner and the farmer, insidious and less spectacular conditions—the cause of much direct loss and loss of production. This is evidenced by the highly successful work carried out by the Colonial Veterinary Services in the control of rinderpest by mass inoculation.

The successful application of control measures demands the full co-operation of the farmer and his staff. The farmer of to-day is more receptive to science and more appreciative of all that veterinary science can do for him in enabling him to attain efficiency than ever before in the history of agriculture. War conditions have brought about this changed outlook. Not only has the change been wrought in the agricultural community, but outside bodies with agricultural interests, the medical and allied sciences, the State departments and last but by no means least, the public are becoming increasingly aware of the unique value of the profession to the health and to the efficiency of production of farm livestock. It is true to say that a varying degree of educational propaganda to agricultural and other bodies is required to maintain our position in the forefront of an efficient agricultural policy. Each and every veterinary surgeon can contribute by maintaining his own work at reasonable efficiency, by taking an active interest in the herd as an entity, by his interest in the wider field of animal husbandry, by making contact with local, district and national bodies with mutual interests, by giving informative talks to groups of farmers and societies, particularly branches of the Farmers' Union and young farmers' clubs, and by making the aims and aspirations of the profession known in each and every walk of life with which he comes in contact. This can be summarized as the need for a full appreciation by the profession of the value of public relations. Co-operation between all branches of the profession—State veterinary surgeons, research workers, teachers and practitioners—is essential for real progress and for improved status. In Northern Ireland I understand there is a considerable body of State veterinary surgeons. My knowledge of the conditions of practice here is not extensive, but may I repeat that the practitioner has an important and vital part to play in State Veterinary Medicine, a part which should be fostered and encouraged to the mutual benefit of the profession and of the livestock industry. Too great an encroachment by the State on work which the practitioner has been accustomed to carry out as part of his practice may—unless he is permitted to partake of this work in a part-time capacity—have the effect of rendering the practice untenable on economic grounds.

This could result in the too wide dispersal of the practitioners who remain to cope with the emergency work on the farms, and in consequence be detrimental to the livestock industry. May I also remark that the value the individual places upon his own services is apt to be reflected in the appreciation he will receive from his clients. I have rarely found a farmer who was not prepared to pay a reasonable fee and to pay for the use of the more expensive drugs, when the advantages were explained to him and more efficient results achieved.

The fact that the veterinary surgeon receives an intensive and wide basic training that far exceeds in its scope that of any other body of scientists whose interests lie in the livestock industry, indicates the important part he should play in the co-ordination and application of measures for the supervision of animal health, and of livestock improvement and production. In Northern Ireland you are ahead of us in England—you have full control of milk production and meat inspection. We in England did envisage the former as coming under our supervision a year or two ago, but a change in ministerial policy now indicates that the goal will not be reached yet, although we are promised that we have a very important part to play in the future build-up of the new agricultural services. Doubtless the advantages you have are being made full use of by the proffering of advice and extending the application of disease control and eradication measures hand-in-hand with your official duties as and when opportunity arises. This, together with the collation of the useful information that can be obtained by the collection of data from the farm and the slaughterhouse should be of great value to progress.

Veterinary education has a yet more important part to play in the future, and the way now appears to be open for vast improvements to be made in facilities and status. The need of post-graduate courses must be met and the special circumstances which render the taking of such courses by the practitioner, particularly the single-handed man, difficult, must be appreciated and overcome. In this connection I would mention the postgraduate courses in the treatment of bovine infertility so successfully carried to more than 500 of our members in their own practices in England by the comparatively small panel of specialist practitioners during one of the war years.

Improvements in educational status and training go hand in hand with increased governmental and public recognition. The need for the payment of adequate salaries commensurate with their qualifications and responsibility, to all State employees, research workers and teachers is of equal importance to the payment of adequate fees for the services of the veterinary practitioner and is the active concern of the N.V.M.A. The practitioner has some considerable direct control over the fees for which he is prepared to work and in my experience the animal-owning community is

* Address to the Annual General Meeting of the North of Ireland Veterinary Medical Association at Belfast on February 21st, 1946, on the occasion of visit to Northern Ireland as President, N.V.M.A.

prepared and willing to pay adequate fees for efficient services.

The Panel Scheme in England has had extraordinarily favourable repercussions in enabling the veterinary surgeon to visit the farm as a routine. Its benefits outside its actual stated functions have been manifest and the interest and appreciation of the agricultural community have been reflected in the reports received from a cross section of farmers within the scheme and by the request of the N.F.U. and of the Ministry for the scheme to continue for a further period of three years. This scheme has emphasized the value of the Veterinary Investigation Services, more particularly in regard to the laboratory facilities thereby made available to the practitioner; a fruitful field for future expansion in view of the emphasis placed to-day on livestock and herd improvement.

More and more research and research workers are required urgently—there is so much to be accomplished to add to what has been achieved. In this connection I would commend to you the Veterinary Educational Trust, an independent body which appeals for and is receiving financial support, both from the profession and from animal owners. The work of the Trust has already borne considerable fruit and its future progress will be of inestimable benefit to the advancement of veterinary science. Some of you may have noticed that a group of veterinary surgeons in America have started a scheme on the same lines and have made their initial appeal for financial support to their own colleagues prior to an appeal to societies within the livestock industry, to associated industries and to the animal-owning public.

While satisfactory results can be obtained in the treatment of most forms of infertility we have much to learn regarding the factors concerned with the survivality of the fertilized ovum and with the nidation, growth and development of the embryo. Some work was done years ago on the mare and given up on account of expense. It indicated three very critical phases at six to eight weeks, three to four months and at the seven months period of gestation. Future research into the various types of mastitis and into the relationship between management and milking methods, teat and udder conformation and the onset of disease and into the new chemotherapeutic measures of treatment and control are obviously essential. The production of a tuberculin of greater specificity and biochemical research into obscure metabolic disorders are of urgent importance. The enormous advances made in preventive medicine in sheep diseases, in the control of poultry diseases, contagious bovine abortion and probably of swine fever by the use of crystal-violet-vaccine when available in adequate amount, are factors of great importance, while advances in diagnostic methods, and in anaesthesia and surgical techniques redound to the credit of our profession. Research work in progress was indicated in the recent visit of the N.V.M.A. to Weybridge and included investigations upon a dead abortion vaccine, extract vaccines, improved staphylococcal and *C. pyogenes* toxoids, a Johne's disease vaccine, a dead swine erysipelas vaccine and the use of the sulphonamides and penicillin in the treatment of the various forms of mastitis. Much good work has been done by others and I particularly mention that of Dr. Kerr and Dr. Lamont, whose work is well known to you all, particularly that on trichomoniasis, a disease which is the cause of great loss in this part of the British Isles as well as in England and in which a danger exists of the incidence in pedigree herds rising above the average as a result of the traffic in infected high priced bulls. The restriction of movement of infected bulls would be a rational measure of control but the difficulties of application are many.

The future of the profession has been indicated in my address. It is the continuance of the natural evolution from the treatment of the individual animal to the responsibility for the positive health of the herd or flock, for animal productivity, and for the control of the quality of livestock products. The State department must co-ordinate the work and the various sections of the profession must play their appropriate parts in the application of the measures devised to effect the maximum efficiency. The grading up of dairy and other stock is an obvious corollary of planned disease control and eradication and here the fundamental training of the veterinary surgeon, particularly that in animal husbandry, can be utilized to great advantage. The application of artificial insemination is an obvious method of effecting more rapid results in herd improvement by making the services of the best bulls available to the largest number of animals in the shortest possible time at a fee which can come within the province of the smallest owners. Its value in disease control in view of the increased incidence of venereal types of disease is well recognized. In this connection we in England appreciate the replacements for our dairy herds provided by Ireland but we would welcome more tuberculin tested grading up dairy stock, vaccinated against abortion as calves or bulling heifers, and in calf by artificial insemination to high-class dairy type bulls to ensure that trichomoniasis is not likely to be introduced into the receiving herd. We would also welcome the encouragement of milk recording and of butter fat testing, so that the value of the stock could be assessed on some more definite factors than conformation, or opinion of potential milking propensities. Where artificial insemination is not available we would prefer the use of pedigree bulls of a satisfactory standard of type, conformation and records.

The interest of the veterinary surgeon in pasture management and the production and harvesting of fodder crops is of considerable moment in these days of world food shortage. The problems arising in connection with their most efficient use and the incidence of metabolic disorders are ones in which clinical observation is likely to prove of great value. Self-sufficiency on the farm to-day is dependent on fodder crops and is likely to be necessary for many years to come.

The application of new chemotherapeutic agents such as penicillin and the newer sulphonamides will place a further responsibility on the profession to ensure they are not abused and in that way discredited. The unfortunate over-optimistic, apparently authoritative but incorrect statements which have been published in the agricultural Press, usually by non-veterinarians, claiming 100 per cent. or near cures of mastitis are so exaggerated as to suggest the need for specific action to correct them. It must be remembered that the proper application of these somewhat expensive products depends upon skilled diagnosis confirmed in the laboratory, that they have a varying application in the different types of mastitis and that the injection of the chosen agent must be made under conditions comparable to strict surgical technique. With such safeguards, waste of the product concerned and the tendency for it to be discredited by improper application and the transmission of infection from cow to cow can be avoided. These drugs can only be applied to the best advantage by the veterinary surgeon with adequate laboratory facilities behind him. Chemotherapy appears to promise a wonderful field for veterinary science in the future as other products become available in their appropriate spheres.

If I were to forecast the future I would hazard a rapid extension of co-operation between practitioners themselves, between practitioners, whole-time veterinary surgeons and research workers and between the whole profession and the State departments responsible for animal and human health and for food.

The tendency to grouping of practices so marked in the medical profession may become more evident in the veterinary profession and assist the provision of improved facilities for work and leisure, and some opportunity for specialization of which I believe we are in urgent need, rather than the tendency to large practices staffed by a number of veterinary surgeons with appropriate lay staff. The elaboration of a long-term State policy for animal health cannot be long delayed and should give great opportunity to those with marked administrative ability.

The provision of wider spread decentralized laboratory services—not necessarily free—for the use of the practitioners in their day-to-day work on the farm on the basis of those created during the war for medicine would appear to be an urgent necessity and essential for future progress.

It would not be fitting if I did not mention some of the activities of the N.V.M.A. Our relationship with the Animal Health Division of the Ministry of Agriculture is extremely cordial and it is hoped that much constructive work will result; our relations with the N.F.U. are happy and going forward in a spirit of mutual co-operation and our growing contacts with members and societies of the allied sciences on matters of common interest are an indication of their appreciation of the future of veterinary science. Representations made to the Colonial Secretary by the N.V.M.A. have already had favourable results in bringing about the initiation of some of those long sought improvements in the Colonial Veterinary Service, but time must necessarily elapse for fuller application to be arranged. The work of the Agricultural Research Council is appreciated by all and we are hopeful of greater opportunity for co-operation and increased veterinary representation in the near future. Our representation on the Parliamentary and Scientific Committee of the House of Commons has been of inestimable value in the last few years.

The Association maintains a close and active contact with the Milk Marketing Board, the National Cattle Breeders Association, many of the breed societies, the National Horse Association, the Institute of Auctioneers and Estate Agents, the Kennel Club and the National Greyhound Racing Club, the R.S.P.C.A., Our Dumb Friends' League, the University Federation of Animal Welfare, and other charitable animal societies and many other bodies of national and local importance with mutual interests. We are receiving more and more attention from the national, the agricultural and the canine Press, an indication of our vastly increased activities and of the growing realization of the vital part we have to play in agriculture and in all branches of the livestock industry. We are on the threshold of a great future.

The Diagnosis of Onchocerciasis

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Onchocerca infection was found in horses affected with fistulous withers and poll evil to the extent of 74 per cent. in a series of 53 cases examined by the writer (Steward, 1935) and has been recorded by various writers in other countries. On the other hand, the statement is sometimes made that *Onchocerca* infection has not been detected in a series of cases—as, for example, in the recent paper by Wright (1946) who amplifies it by saying "a detailed search by a parasitologist was not made."

In the interests of establishing the true aetiology of the disease and the exact incidence of *Onchocerca* infection, as well as for its treatment and control, the detection of the presence of the nematodes is of importance. It may therefore be advantageous to give a detailed description of the methods which may be employed to detect the infection.

The Detection of the Adult Worms

This may be attempted either *post-mortem* or on operation material and in either case the greatest care and diligence must be exercised or the parasites will be missed. The main predilection site (for *O. cervicalis*) in the limited number of observations made appeared to be the fibro-elastic or fibro-areolar tissue joining the lamellar and funicular portions of the ligamentum nuchae, either at the poll or withers.

It is best to examine the material in the fresh state, when the worms may be expected to be found alive. They are most easily found by examining the cut surface of the ligamentum nuchae at an obtuse angle to the light so as to detect the cut ends of the female worms protruding 1 or 2 mm. from the cut surface. If none are seen further surfaces are exposed by fresh incisions and examined in the same way. The parasite should be examined under the dissecting or compound microscope to confirm the diagnosis by detecting the typical cuticular thickenings of the female worm. If unsuccessful, a portion of the material may be submitted for histological section and staining—dead or calcified worms may be detected in this way. A further step which may be taken after an unsuccessful search is to put the tissues in a jar of water in a warm place to macerate for a few days. By this means the tissues become so friable that they may be pulled apart and the worms discovered more or less complete.

It should be emphasized that worms were never found in the fibro-fatty pad but only in the ligament and fibro-elastic or fibro-areolar tissue joining the two portions of the ligament. In cattle in this country *Onchocerca* may often be found (Steward, 1937) in the connective tissue joining the spleen to the rumen, or in the soft connective tissue between the two lamellar portions of the ligamentum nuchae. Here, too, they may be seen most easily by holding the ruminal surface of the spleen or inner face of the ligament towards the light and looking at a very obtuse angle for the serpentine (slight) projection that marks the course of the worm under the connective tissue. To obtain the worm prick the connective tissue with a needle and extract. Ten or 12 inches may be extracted with care, but seldom an intact worm. The width of the female worm does not generally exceed 0·3 mm. whilst males are from 6 to 7 cm. in length and attain a maximum thickness of 0·1 mm. It is no wonder, therefore, that the worms are seldom seen unless sought diligently.

The Detection of the Microfilariae

The microfilarial embryos of *Onchocerca* are generally found in the substance of the skin, in which they may usually be detected with far greater ease than the adults in their ligamentous habitat.

It is necessary to remove a portion of the entire skin thickness. With horses the most convenient way seems to be to stand by the off shoulder and with forceps pick up a piece of skin at the convexity of the brisket over the anterior superficial pectoral muscle. It is advantageous to remove the hair before excision. Two or three sutures are applied to the resulting gap in the horse's skin. The muscle should be visible if the full thickness of the skin has been excised. A piece of skin about one inch long is excised with strong half curved scissors and is placed in water in a centrifuge or tapered test tube and teased with a needle. The tube is shaken and left standing-upright for half an hour or so, when the deposit is drawn off with a pipette and placed on a slide. If a rectangular area is marked on the slide with a wax pencil more water can be examined at one time and does not flood all over the slide. A cover slip is not used and suitable magnification is provided by a 2/3 in. objective and low power ocular. With experience a 1 in. objective is more convenient. The unstained living microfilariae are mostly found close to the edge of the drop. They are "unsheathed" and even in specimens four or five days old usually (if not actively moving) assume a typical position in which the body is straight but the tip of the tail is bent. In specimens that are not absolutely fresh small moulds may be found which under the low power closely resemble microfilariae but do not taper at the tail end and do not assume the typical position.

Diagnosis of unstained microfilariae should depend on observing movement or the typical position and its conforming to the described measurements. Staining by Giemsa, Leishman or even methylene blue will reveal the internal structure of the parasites but microfilariae are very often lost in staining or washing.

Serial sections of skin show that the microfilariae (*O. cervicalis*) occur in the subcuticular layer adjacent to and immediately beneath the glandular area. This, therefore, is the reason for excising skin to its full depth. Microfilarie will not be detected from horses harbouring immature or dead worms. The pre-patent period (from infection to time of laying) appears to be long and re-examination of "skin negative" animals a month or two later has sometimes given positive results.

Xenodiagnosis

This method of diagnosing infection by the demonstration of microfilariae in the appropriate intermediate hosts is only of academic or research interest though it has been applied to the diagnosis of *Habronema*.

For convenience a table (modified from Neveu Lemaire, 1936) is appended of the more important species of *Onchocerca* and their hosts, habitats, distribution, etc.

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Species of Onchocerca

Worm	Host	Habitat	Distribution	Microfilaria length and width (μ)	Vector	Remarks
O. volvulus ..	Man	Subcutaneous tissues—often nodules	Africa (Tropical)	300 × 6–7	*Simulium damnosum*	—
O. caecutiens ..	„	„ „	America (Central and South)	250 × 8–10	*Simulium* spp.	Regarded by some authors as *O. volvulus*
O. cervicalis ..	Horse	Lig. nuchae	England, U.S.A., Australia, Europe	160–217 × 3–4	*Culicoides nubeculosis*	Regarded by some authors as *O. reticulata*
O. reticulata ..	„	Tendons	Europe, Russia	—	?	—
O. gutturosa ..	Cattle	Lig. nuchae and gastrosplenic conn. tissue	Europe, N. Africa, Australia	150–220 × 4–6	*Simulium ornatum*	? = *O. bovis* and *O. lienalis*, see Steward, 1937
O. bovis ..	Cattle	Conn. tissue around stifle joint. Spleen	France, U.S.A., Australia	—	—	? *O. gutturosa*, see Steward, 1937
O. lienalis ..	„					
O. gibsoni ..	Cattle Zebu	Subcutaneous nodules	Australia, Africa, India, Asia (Malaya, Java, etc.)	220–350 × 3–4	?	—
O. armillata ..	Cattle, Zebu, Buffalo	Aorta	India, Malaya, Africa	285–300 × 6	?	—
O. indica ..	Buffalo, Zebu	Conn. tissue nodules	India, Malaya	120–196 × 2	?	—
O. fasciata ..	Dromedary	Subcutaneous conn. tissue, especially neck	India, Egypt, Australia	?	?	—
O. caprae ..	Goat	Muscles of tongue	Turkestan	?	?	—

ANATOMICAL NOTE

The Digastricus Muscle of the Dog

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The digastricus muscle is so named since in man it consists of two muscular bellies united by a distinct intermediate tendon which plays through a perforation in the tendon of insertion of the stylo-hyoideus muscle. A similar division of the muscle occurs in some domestic animals, *e.g.*, horse and ox, but in the former an additional muscle, which has been termed the stylo-maxillaris or occipito-mandibularis, lies posterior to the upper belly and is blended with it at its origin, while in the latter the intermediate tendon does not perforate the stylo-hyoideus tendon.

At first sight the digastricus muscle of the dog would appear to consist of a single fleshy mass, somewhat fusiform in shape, and showing no intermediate tendon. There is, however, considerable diversity of opinion amongst the authors of the standard text-books with regard to the true nature of the muscle. Owen (1868) states that, in the Carnivora, "The 'digastric' is a powerful muscle and seemingly 'monogastric,' but many tendinous filaments in the middle of the carneous substance indicate the division which is established in the higher Gyrencephala." Chauveau (1873) describes the muscle as having only a single belly, and makes no mention of the tendinous filaments noted by Owen. Sisson (1938) regards the digastricus muscle as being absent, but describes an occipito-mandibularis muscle, which is obviously the muscle in question, and states that "it sometimes has a tendinous intersection." According to Bradley (1943), "inasmuch as this muscle has only one fleshy belly in the dog, the name 'digastric' is apt to mislead."

With regard to the nerve supply of the muscle, Sisson (1938) indicates that this arises from the mylo-hyoid branch of the fifth cranial (trigeminal) nerve, while Appleton (1929) and Bradley (1943) say that the supply comes from the seventh cranial (facial) nerve. It is this discrepancy in statements about the muscle and its nerve supply which has prompted this note.

Twenty dogs were examined in this connection recently, and in every case a definite stratum of tendinous tissue was found running across the muscle. In almost every specimen the edge of this stratum on the surface of the muscle was quite obvious, situated about the middle of its length and running vertically downwards. (The muscle itself runs downwards and forwards when the head is held with its long axis lying horizontally.) When carefully dissected it was seen that the fibrous tissue divided the muscle into upper and lower parts. The upper division was found to be supplied by a large branch arising from the facial nerve soon after it has left the skull through the stylo-mastoid foramen. This is presumably the digastric nerve of Bradley. The lower division was found to receive its innervation through one or two branches of the mylo-hyoid branch of the trigeminal nerve.

Thus, it would appear that there is every justification for regarding the muscle referred to as the digastricus muscle, the upper division being derived from the second branchial arch of the embryo, and the lower division from the first arch. This accords with the double nerve supply, the seventh cranial nerve being the nerve of the second branchial arch and the fifth the nerve of the first arch.

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Satisfactory surgical narcosis in swine can be promptly obtained from intraperitoneal injection of 5 per cent. chloral hydrate solution dosed to provide 2 grains per pound of body weight.—*Rev. Path. Comp.*

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Weekly Wisdom

The difference between science and technology is that science creates the method and technology uses it and asks no questions.—*—*Vet. Med.

CLINICAL COMMUNICATION

A Case of Chronic Ruminal Tympany

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History.—The patient was a Red Poll cow of good pedigree from an attested herd and three months gone in her third pregnancy. She had never carried much flesh but had been a good milker. Over a period of weeks she had lost condition and given decreasing milk yields. Symptoms of inappetence, diminished rumination and staring coat had developed, and her abdomen had become progressively distended until she had assumed a definite pot-bellied appearance.

Examination.—Palpation of the left sub-lumbar fossa revealed a taut but mobile ruminal wall. Respiration was somewhat accelerated due to difficulty in completing inspiration. Temperature was normal. Cardiac auscultation indicated a forwardly displaced apex beat presumably due to pressure on the diaphragm. There was no marked jugular pulse and the "pole-test" was negative.

Diagnosis.—A tentative diagnosis of traumatic reticulitis was made with actinobacillosis of the rumen as an alternative possibility. An exploratory rumenotomy was decided upon and in the event of a foreign body not being found a permanent fistula would be left to relieve the chronic tympany.

Operation.—The cowman at the patient's head and an assistant at the tail provided all the restraint required by holding the cow alongside the stout wooden loose-box partition. Paravertebral anaesthesia was adopted, 10 c.c. 2 per cent. stovaine (M. & B.) being injected over each of the last thoracic and first three lumbar nerve roots. Meanwhile the operation site was clipped, shaved and cleansed with neat Dettol. Having tested the effectiveness of the anaesthetic, an eight-inch vertical incision was made through the skin. The abnormally thin underlying layer of muscle was similarly incised together with the peritoneum which was closely adherent. Slight haemorrhage was controlled by means of artery forceps. The rumen wall could now be seen in unusually excursive movement. It was clasped at top and bottom of the incision with vulsellum forceps while it was anchored to the peritoneum with continuous No. 4, 20-day catgut. A small incision was made in the rumen wall and much gas and a quantity of saturated ingesta were ejected. The latter was cleaned off and the incision enlarged to allow insertion of an oilskin protective sleeve. The rumen was nearly full of liquid ingesta and a considerable amount was evacuated manually to facilitate further operations. No abnormality was palpated in the rumen but the reticulum appeared to be displaced forward somewhat and there were indications of diaphragmatic adhesions. No foreign body was recovered but a thickened band of fibrous tissue gave the impression that one had penetrated the reticular wall and become encapsulated with fibrous tissue.*

The protective sleeve was then removed and the rumen incision closed with No. 4 catgut Czerny Lembert sutures except for the top two inches. The resulting fistula was maintained by suturing to the skin. Sulphanilamide was dusted over the area and the muscle and skin incisions closed by four one-inch tape eversion sutures so as to leave the fistula patent. Finally the operation site was dressed with propamidine jelly.

Result.—Healing was almost by first intention. The eversion sutures were removed at seven days. The pot-belly subsided and the appetite returned. The fistula remained patent until one month before calving, apparently causing no inconvenience save to the cowman. Condition rapidly improved and the cow put on flesh. She calved normally and gave 56 lb. milk per day as peak yield at 14 days after parturition.

Discussion.—It seems probable that a penetrating foreign body was responsible for all the observed symptoms. By deranging rumino-reticular function and impeding rumination a condition of stasis had been produced resulting in chronic ruminal distension and atony of the abdominal muscles. The fistula relieved tension and allowed resumption of normal digestive activity with consequent improvement in condition. Fortunately the fistula had closed naturally when its function had been fulfilled, thus obviating the need for further surgical interference.

* During palpation of the reticulum the cow commenced ruminating and this activity ceased when the hand was withdrawn. This observation is in accordance with the contention that reticular function is concerned in rumination and supports the view that traumatic reticulitis could interfere with rumination directly, quite apart from the effects of associated pain.

NEW APPLIANCES

A Modified Intravenous Needle

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The author has for some years been using a modified combined form of teat syphon and hypodermic needle for administration of bulky intravenous injections. The instrument has several advantages over an ordinary hypodermic needle, the most important being the complete elimination of risk of perforating the opposite wall of a vein, and freedom from clotting in the needle.

The syphon is made to fit the bore of the needle perfectly and so prevent back leakage; fastening and adjustment is made by a small projection on the syphon running in a slot on the needle, exactly in the manner of an electric light bulb in its holder. This fitting is so arranged that by half a turn of the syphon the end of the needle will cover or uncover the hole in the end of the syphon, thus allowing adjustment of the rate of flow of the fluid.

When the syphon component is pushed fully into the needle, the end of it will project slightly beyond the needle, the point of which lies flat against the syphon, and is unable to "pick up."

The length of the instrument is also of some importance. The whole of the needle should be introduced into the vein, until the skin of the animal is flush with the shank of the needle. The syphon's end will then impinge on the vein wall at a very acute angle (Fig. 4). The exact opposite of this is depicted in Fig. 5, where the needle shown is one in general use in the R.A.V.C. and in civilian practice. The pull on the needle occasioned by movements of the animal will cause the point of the needle to scrape against the deep wall of the vein, trauma and perforation being common results.

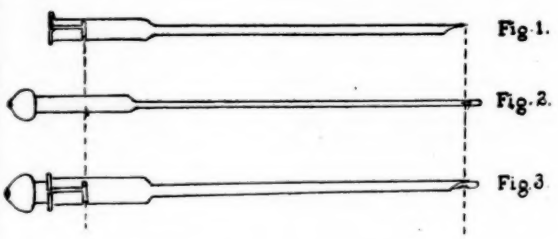

Fig. 1.—The needle component.

Fig. 2.—The syphon component.

Fig. 3.—The two assembled, and in the open position.

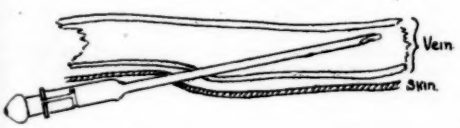

Fig. 4.

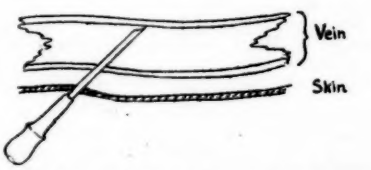

Fig. 5.

The ideal application for this instrument is in general anaesthesia with intravenous chloral hydrate. It has been found possible to give the chloral to the animal standing and allow it to go down without perforation of the vein, or damaging it.

The most satisfactory apparatus to use for intravenous anaesthesia is the B.D.H. "Vena Flask," which has been described by Williams and Roach. The instrument after being introduced may be left *in situ* for the duration of the operation; drip administration may be conveniently employed, and when the solution is not flowing through the syphon, clotting may be prevented by turning the syphon in the needle so as to occlude the aperture.

Reference

Williams, R. E., and Roach, R. W. *Vet. Rec.* **57**. 37.

ABSTRACTS

[On the Chemotherapy of Caecal Coccidiosis (*Eimeria tenella*) of Chickens. II.—Further Studies on the Use of Drugs in Established Infections. Swales, W. E. (1946.) *Canad. J. comp. Med.* **10** (1). 3-13.]

Swales describes the experimental procedure and the results of tests carried out in chemotherapy of established infections of caecal coccidiosis, due to *Eimeria tenella*, in chickens. The present series of experiments support the author's previous findings (*Canad. J. Res.*, D. **22**. 131-140, 1944) that sulphamerazine (2-sulphanilamido-4-methylpyrimidine) and its sodium salt are highly effective coccidiostatic agents and will check the disease when given during the fourth day after infection and when intestinal haemorrhage is apparent. The experiments also showed that the dimethyl and the unmethylated counterparts, sulphamezathine and sulphadiazine, were likewise coccidiostatic but limited tests with the fully methylated drug (2-sulphanilamido-4, 5, 6-trimethylpyrimidine) and with 2-sulphanilamido-4, 5-dimethylpyrimidine showed them to be inactive. Other chemicals, related only through the pyrimidine structure, did not show any promise of being of therapeutic value. Studies on dosage and period of treatment showed that 2 grammes of sulphamerazine per lb. of feed or 2 grammes of its sodium salt per litre of drinking water appear to be the desirable dose, if optimum results are to be obtained from the use of this drug, and given over three days starting as soon as bloody droppings appear. A commercial preparation was found to have equal efficiency as long as the dosage was increased to counteract the dilution by other ingredients of the sulphamerazine. No indication of toxic effects was found when the drug was used at this dosage. There is apparently, no advantage in continuing treatment of infected birds for more than three days, starting at the first sign of bloody droppings, because after the start of visible bleeding the birds either die during the next three or four days or start to recover. If the second generation merozoites are effectively inhibited then the disease will be limited within at least three days and the birds' caeca, except those severely damaged, should subsequently return to a normal condition. This finding is important, especially when the drug is to be used under practical conditions. Measurements of blood haemoglobin levels of infected chickens were a useful indication of the extent of the disease and of the action of the drugs.

J. N. O.

* * * * *

[Transmission of the Toxicity of D.D.T. through the Milk of White Rats and Goats. Telford, H. S., and Guthrie, J. E. (1945.) *Science*. **102**. 647.]

The authors obtained evidence to show that the toxic principle of D.D.T. was transmitted through the mother's milk, when 0·1 per cent. of this insecticide was fed in a balanced mash to white rats, since the young rats showed toxic symptoms before weaning. Adult rats fed solely on goats' milk, obtained from animals receiving daily oral dosages of 1 gramme of D.D.T. per 8 or 9 lb. body weight, died within two to 29 days after showing typical D.D.T. symptoms, while toxic goats' milk fed to recently parturient rats produced symptoms in both the mothers and the nurselings. A half-grown kitten given milk from a goat under treatment for 25 days died with typical D.D.T. symptoms within three days, whereas an unweaned kid allowed to suckle *ad lib.* a goat under treatment for 27 days showed no harmful effects. There is some evidence that the toxic principle of D.D.T. is concentrated in the fat globules of the milk because butter, prepared from the milk of treated goats, produced typical tremors in rats within 24 hours of their being fed this material. Frequent administration of D.D.T. suppressed, between the 21st and 28th day of dosing, milk secretion in goats some of which showed no toxic symptoms and all of which recovered after dosing ceased. Since the milk apparently became more toxic after an extended period of treatment, the authors consider that either the poison was eliminated in the milk in ever-increasing amounts or similar amounts of the toxic substance were eliminated daily but became more concentrated as the milk supply diminished. As D.D.T. has been shown to be absorbed through the skin of laboratory animals, a goat was daily sprayed with 150 c.c. of a 10 per cent. D.D.T. emulsion, but the milk from this animal produced no toxic symptoms within 42 days when fed to rats nor within 76 days in a young kid allowed to suckle the sprayed animal. As a result of these tests the authors believe there is a need for more intensive research on the toxicity of milk from dairy cows ingesting D.D.T. residues either from sprayed or dusted forage plants or from licking themselves after being sprayed or dusted with this insecticide.

J. N. O.

Victoria Veterinary Benevolent Fund

MEETING OF COUNCIL

A meeting of the Council of the Victoria Veterinary Benevolent Fund was held at 10, Red Lion Square, London, W.C.1, on Wednesday, April 24th, 1946, when the following members were present:—Mr. Arnold Spicer (President) in the chair, Mr. Esmond Brown, Professor J. B. Buxton (Hon. Treasurer), Major J. J. Dunlop, Mrs. E. M. Gould, Mrs. D. I. Glover, Mr. G. P. Male, Lt.-Colonel G. B. Rees-Mogg, Mr. H. W. Steele-Bodger, Lt.-Colonel P. J. Simpson (Hon. Secretary), Professor G. H. Wooldridge and Mrs. W. G. Wragg. Also in attendance, Mr. C. W. Francis. An apology for absence was received from Captain W. G. Wragg.

Minutes.—The minutes of the previous meeting, having been published, were taken as read and signed as correct.

DEATH OF MR. J. W. MCINTOSH (Vice-President of the Fund)

Reference to the recent death of Mr. J. W. McIntosh was made by the PRESIDENT. He stressed the work that Mr. McIntosh and his family had performed for the furtherance of the work of the Fund.

The President proposed:—

"That the sincere condolence of the Council be conveyed to Mrs. McIntosh and her daughter in the heavy bereavement that they have sustained."

This was seconded by the HON. SECRETARY and carried unanimously, all present standing in silence.

DEATH OF DR. FRED BULLOCK, LL.D. (Secretary of the Fund)

The PRESIDENT reported the irreparable loss the Fund had sustained by the death of its beloved Secretary, which took place on February 14th, 1946.

After referring to the generous and hard work that Dr. Bullock had given to the Fund, he moved:—

"That the Council place on record its profound regret at the loss of their devoted Secretary, who was universally esteemed and respected, and that the heartfelt condolences of the Council be conveyed to Mrs. Bullock and her son in the great bereavement which they have sustained."

This was seconded by Professor J. B. BUXTON and unanimously carried, all the members standing in silence.

Life Members.—The following were appointed Life Members of the Fund: Major T. F. Arnold, Major J. J. Dunlop, Messrs. G. N. Gould, P. J. Howard, Captains J. A. McLauchlan, J. A. McMenamin, J. Richardson, Mr. H. W. Steele-Bodger.

Nominations to Council.—The Hon. Secretary reported the following nominations to Council:—

By the South Eastern Veterinary Association: Major L. P. Pugh, B.SC., F.R.C.V.S.

By the Royal Counties Veterinary Medical Association: Mr. H. Bell, M.R.C.V.S.

Report of Executive Committee.—The Hon. Secretary reported that during the period under review the circumstances of all the recipients had been investigated, and in some cases the grants had been increased, others reduced and a few discontinued. A few fresh applications had been received and suitable grants made.

APPOINTMENTS OF SECRETARY AND ACCOUNTANT

Major J. J. DUNLOP proposed, and Professor G. H. WOOLDRIDGE seconded:—

(1) That Lt.-Colonel P. J. Simpson, Hon Secretary, be appointed in his present capacity to fill the vacancy of Secretary, and that he be granted a sum of £100 (one hundred pounds) to cover his personal expenses.

(2) That Mr. C. W. Francis be appointed to fill the newly created post of Accountant to the Fund, to be made retrospective as from January 1st, 1946, at a salary of £100 (one hundred pounds) per annum.

(3) That the President, Hon. Treasurer, and the Accountant or Hon. Secretary, be empowered to sign and endorse all cheques and other documents of the Fund, and that Messrs. Barclays Bank, Ltd, Henrietta Street, Covent Garden, London, W.C., the Fund's Bankers, be informed accordingly.

The motions on being put to the meeting were carried.

Annual Report.—The draft annual report and statement of accounts was submitted and approved for issue to the members.

Vote of Thanks.—A vote of thanks to the President for his conduct in the chair concluded the meeting.

P. J. SIMPSON, *Hon. Secretary.*

Mr. W. E. Bowden, of the Milk Marketing Board, told a Taunton meeting that new main artificial insemination centres would be in operation by the autumn at Chippenham (Wilts.), Sturminster Newton (Dorset), Gloucester, and Torrington (Devon).

QUESTIONS IN PARLIAMENT

LIVESTOCK FOR EXPORT (QUARANTINE STATIONS)

Mr. HURD asked the Minister of Agriculture if he will increase the accommodation at the quarantine station through which pedigree livestock for export must pass so as to obviate the present delays in arranging shipments.

Mr. OLIVER POOLE asked the Minister of Agriculture whether he will provide additional accommodation for quarantine in regard to livestock for export, as the present arrangements are totally inadequate.

THE MINISTER OF AGRICULTURE (Mr. THOMAS WILLIAMS): There are now three quarantine stations in Great Britain, providing accommodation in the aggregate for 145 cattle and 60 sheep or pigs. While I cannot agree that this is not normally adequate for the present volume of the trade, I am considering the possibilities of a modest enlargement of the Glasgow quarantine station to meet the larger accommodation provided by one of the vessels running to Canada.

Mr. O. POOLE: Is the hon. Gentleman aware that buyers from abroad have difficulty in getting their purchases out of the country on account of the quarantine?

Mr. WILLIAMS: Yes, Sir. I am aware of that, and that is why we are endeavouring to increase the accommodation in Glasgow.

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TSETSE FLY, TANGANYIKA

Lady NOEL-BUXTON asked the Secretary of State for the Colonies what progress has been made in Tanganyika during the last ten years in clearing land of the tsetse fly.

Mr. GEORGE HALL: During the last ten years, 1,150 square miles of land have been cleared of tsetse fly and 44,300 persons resettled in the cleared areas. An additional 1,130 square miles are in course of reclamation and 550 square miles have been surveyed and await reclamation. A further 1,200 square miles are in course of survey.

NOTES AND NEWS

Diary of Events

June 19th.—Meeting of the Section of Comparative Medicine, Royal Society of Medicine, 1, Wimpole Street, W.1, 2 p.m.

June 19th.—Meeting of the Society of Veterinary Practitioners at Edinburgh (Caledonian Hotel), 6.30 p.m.

THE FOLLOWING IS THE PROGRAMME FOR N.V.M.A. COUNCIL AND COMMITTEE MEETINGS IN JUNE IN EDINBURGH

WEDNESDAY, JUNE 19TH

11 a.m.—Finance and General Purposes Committee.
2.30 p.m.—Sub-committee on First Aid Handbook.

THURSDAY, JUNE 20TH

10 a.m.—Appointments Committee.
11.30 a.m.—Organising Committee.
2.15 p.m.—Joint Veterinary Officers, Public Health and Parliamentary Committee.

FRIDAY, JUNE 21ST

11 a.m.—Council Meeting.

June 27th.—R.C.V.S. Written Examinations begin.

June 27th.—Meeting of the Derbyshire Division, N.V.M.A., at the Midland Agricultural College, Sutton Bonington, 2 p.m.

July 1st.—R.C.V.S. Oral and Practical Examinations commence.

Sept. 23rd-27th inclusive.—Annual Meeting and Conference of the National Veterinary Medical Association of Great Britain and Ireland, to be held in London.

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PERSONAL

Birth.—GAMBLES.—On May 28th, 1946, at Nicosia, Cyprus, to Margaret (*née* McClintock), wife of R. Moylan Gambles, M.A., B.SC., M.R.C.V.S., of the Colonial Veterinary Service, a son—Jonathan Patrick.

Appointment.—Captain A. E. Dorman, M.R.C.V.S., of Ivy Hatch, Sevenoaks, Kent, has been appointed to the Colonial Service as a Veterinary Officer in Kenya. Captain Dorman served in the Irish Guards during the war and was twice wounded.

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Marriage.—Angus—Andrews.—On Saturday, June 1st, 1946, at Wylde-Green Congregational Church, W. G. Stewart Angus, B.Sc. (Agric.), M.R.C.V.S., only son of Mr. and Mrs. W. G. Angus, of Aberdeen, to Daphne Enid Andrews, only daughter of Mrs. Enid Andrews, of Wylde Green, Warwickshire.

. . . . . .

Will.—Mr. Charles Hedley Ducksbury, M.R.C.V.S., D.V.S.M., of 105, North Street, Calne, who died at Bath on October 23rd last, intestate, left £18,133 16s. 4d. gross, with net personalty £16,667 9s. 11d.

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ROYAL COLLEGE OF VETERINARY SURGEONS

Mr. Howard Dawes Elected President

Our readers will learn with great pleasure that, at the special meeting of Council held at 10, Red Lion Square, W.C.1, on Thursday of last week, Mr. Howard Winnington Dawes, M.R.C.V.S., the well-known practitioner, of Camden House, West Bromwich, was elected President of the Royal College of Veterinary Surgeons, in succession to Major A. B. Mattinson.

Mr. Howard Dawes, who was elected to Council in 1934, has throughout rendered able and conscientious service to the Governing Body, notably as Chairman of the Exaxmination Committee over a number of years. A biography of the new President will appear in an early issue.

At the same meeting Mr. William Geoffrey Ronald Oates, Acting Secretary and Acting Registrar, was appointed Secretary and Registrar of the Royal College in succession to the late Dr. Bullock.

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The Department of Agriculture at University College, Aberystwyth, has been divided into two and there will in future be two professorial chairs, Agriculture (Animal Husbandry) and Agriculture (Crop Husbandry). The first has been filled by the appointment of Dr. J. E. Nichols, Director of the Imperial Bureau of Animal Breeding and Genetics, Edinburgh, and formerly Hackett Professor of Agriculture, University of Western Australia. An early appointment to the chair of Crop Husbandry is expected.—*Farmer and Stock-Breeder.*

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The new offices of the Livestock Export Group are at the Farmers' Club, 3, Whitehall Court, S.W.1, and the Secretary is now Mr. F. T. Levick.

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Speaking at the annual meeting of the Chillingham Wild Cattle Association at Newcastle, Lord Tankerville expressed the hope that the 32 pure white cattle of the herd might belong to the nation—and that was one instance where nationalization might well be applied.

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ADDRESSES OF DISEASE-INFECTED PREMISES

The list given below indicates, first, the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak.

Foot-and-Mouth Disease:

Somerset.—The George Inn, Bathampton, Bath (June 9th).

Swine Fever:

Ayrshire.—Cauldstane Farm, Fenwick, Kilmarnock, Ayrshire (June 6th).

Lincs.—The Bungalow, Washingborough, Lincoln (June 5th).

Northants.—The Mill, Bugbrooke, Northampton (June 5th).

Notts.—Mudpie Lane, Adbolton, Gamston, Retford, Notts; Dennis Street Gardens, Netherfield, Nottingham (June 8th).

Rutland.—Middle Street, Langham, Oakham, Rutland (June 8th).

Yorks (E.R.).—"Coastguard House," Cliff Top, Aldbrough, Hull, Yorkshire (June 8th); Mill Farm, Skipold, Driffield, Yorks. (June 10th).

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SERIOUS SPREAD OF NAGANA IN ZULULAND

The Capetown Correspondent of *The Times* reports that the South African Agricultural Department is seriously alarmed by the spread of nagana in Zululand, where during the past few months 15,000 cattle have died. The message continues: "The only effective means of controlling the disease is to control the tsetse fly, but 25 years' work has not yet produced a really successful method of doing this. At one time it was thought that trapping would clear the tsetse areas, but that hope proved vain. Then the veterinary authorities embarked on a policy of shooting out game in tsetse areas, so that when the natural hosts were destroyed the tsetse would be reduced to negligible numbers. This policy has now been in force for ten years at least and has been carried out with special thoroughness during the past few months, but nagana is worse than ever.

"The Agricultural Department has had some success in the experimental dusting of D.D.T. over large areas for the control of tsetse, and it is hoped that if this is continued D.D.T. may save game from bullets as well as cattle from nagana."

The same paper's Correspondent in Durban writes: "Nagana is sweeping through large areas of Northern Zululand and has already spread into Swaziland. In the past six months 15,000 cattle have died from this disease in the Magut district alone. Drastic Government action is now to be taken, and supplies of a new drug, '1553,' used for inoculation purposes, have been ordered from Britain. The first consignment of 6,000 doses is to be flown to the Union at once, and will be used in a mass inoculation campaign. Not only cattle but donkeys, dogs and horses have died."

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VETERINARIAN'S INTERVENTION IN SHEEP SLAUGHTER CONTROVERSY

"Humane methods of slaughtering of animals and the discussion at a Devon Rural Council meeting last week have drawn comments and criticism from Mr. R. Glave Saunders, C.B.E., M.R.C.V.S., F.Z.S., Exeter's war-time Mayor for six years," states the *Exeter Express and Echo*, as an introduction to the following letter from Mr. Glave Saunders, who is the Hon. Secretary of the Exeter, East and West Devon Branch of the R.S.P.C.A.:—

"Sir,—Those of us who know something about the methods of slaughter were very surprised to read that the Holsworthy R.D.C. decided to continue the out-of-date, unscientific and cruel method of killing sheep with the knife. We were even more surprised to note that one councillor referred to this method as 'the straightforward way of killing.'

"At Exeter we have been killing sheep with the captive bolt pistol for years, and I know that not one of our slaughtermen would go back to the old method. It is instantaneous; the victims never hear the blank cartridge explode; they are unconscious before the sound waves reach the ear. Whereas with the knife it takes half a minute, or longer, to render them unconscious. Further, it has been proved conclusively that the humane methods make no difference to the keeping qualities of the meat.

"Early in the century I believe I was the first person in Cornwall (where I was then living) to use the humane killer, without having seen a demonstrator use it. Since then I have killed hundreds of animals without a mishap.

"For further information see the standard work: 'Pistol *v.* Poleaxe' (Chapman and Hall, Ltd)."

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BRITISH MISSION TO AMERICA TO STUDY THE MECHANIZATION OF MILK PRODUCTION

Following a recommendation made by the Agricultural Machinery Development Board, the Ministry of Agriculture, after consultation with the Ministry of Food, has made arrangements for a small mission to visit North America, consisting of: Mr. H. S. Hall, Head of the Dairy Engineering Section of the National Institute for Research in Dairying; Mr. A. Rowlands, Bacteriologist at the National Institute for Research in Dairying.

The main objects of the Mission will be to examine the mechanization of milk production and handling with particular reference to cowshed practice, machine milking, the design of milk equipment, methods of cooling and sterilizing, and the effects on the baceriological quality of milk; and to study the current research work being undertaken in this field.

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"The Veterinary Services Face a Formidable Task in Germany"

The May issue of the "British Zone Review" carries an informative article under the above heading, contributed by "P.H.T.E.," from which we extract the following:—

Headed by Dr. Weber, a close friend of Hitler, the German State Veterinary Service was one of the most severely nazified branches of public administration in Germany. The task of purging it and forming an organization with similar aims without loss of time was one of the foremost problems confronting the Veterinary and Remounts Section on arrival in Germany.

It was, however, only one of the many tasks with which this

branch of Control Commission had to deal. Among others were those of organizing the animals in the zone and the combating of disease: ill-conditioned horses of the Wehrmacht caused an outbreak of mange which, even now, will still take months to eradicate, foot-and-mouth disease and bovine tuberculosis, due largely to a general breakdown of organization in the latter stages of the war, represented also a far reaching problem to be tackled without loss of time.

The need for a comprehensive and efficient veterinary service is obvious: one cannot travel any distance in town or country without becoming aware of the prominent part the horse, for example, is playing in the economic system. The need is further emphasized by the fact that there are now more horses in the zone than in 1938 and, notwithstanding the normal ravages resulting from a lost war and the chaos which for a time automatically follows capitulation, the number of cattle is not far below the pre-war figure.

Work on organizing a veterinary service began immediately and one is now operating in the zone. A Zonal Advisory Veterinary Committee of Germans has been established and is intended, in time, to take over most of the executive veterinary work, which includes not only the normal administration and preventing the spread of contagious or infectious diseases but also the task of training future surgeons. Progress already made in this field results from the opening in November last year of the only veterinary college in the zone, at Hannover, where classes are now held in all branches of the curriculum. This building, incidentally, although badly blitzed, is slowly being repaired and the students do their share, a rule having been made by the German College staff that students shall spend two weeks each term cleaning old bricks and helping in the reconstruction of the college.

There are about 900,000 horses in the zone of which, because of the fodder shortage, a number may have to be eliminated in the near future, leaving only those required to meet essential needs. The slight increase over the pre-war figure was largely caused by the number of horses introduced into the Schleswig-Holstein area at the end of the war by the retreating Wehrmacht. Many of these animals were in appalling condition and scattered over a wide area, which added to the difficulties of getting them concentrated and despatched to localities where horses were needed to help ease the transport situation.

With a view to possible future requirements of the army, it was the practice to encourage farmers to work with a light type of horse which could be switched at short notice to meet the needs of a fighting machine. For this reason many light breeds of horses are seen pulling ploughs and doing other heavy work on German farms to-day. It was practical, however, in that much of the farmland here is lighter than that of England and the work can be done by a correspondingly lighter horse without undue strain; a result of this is that there is a surplus of light and a deficiency of heavy breeds in the zone. Horse breeding is now being encouraged with an eye to exploiting possible export channels, for there is a considerable shortage of horses throughout Europe, and now in-foal mares can be seen on most farms throughout the zone.

Disease amongst animals presents a number of problems in the way of shortage of medicines and biologicals, shortage of trained experts, and a general shortage of stores and equipment. The greatest problem is provided by foot-and-mouth disease, which has always been a serious and ever-present menace to German cattle farmers. In England, of course, animals suffering from foot-and-mouth disease are destroyed and neighbouring herds undergo a period of quarantine to prevent a spread of infection. Because England is an island, this method, although drastic, has secured justifiable results; being surrounded by water the spread of the disease from outside the country is restricted. In Germany, however, this method of "cure by destruction" has not been adopted, possibly because the disease is far more prevalent and because of the ease with which epidemics can spread from adjoining countries.

The solution in Germany, therefore, has been in vaccinating cattle. This method is still employed but under great difficulties, as the German source of vaccine supply, the island of Rheims in the Baltic, is now in the Russian zone and supplies from there are no longer available. As a temporary measure vaccine is being imported from Denmark while arrangements are being completed to produce vaccine in large quantities in Hannover Province. It is anticipated that the first amounts will be produced there this year.

A system which assists considerably in limiting the spread of disease is now in operation, whereby early information is received from countries outside the zone as to the movement of any cattle epidemics. From such intelligence it is possible to take in advance local precautionary measures should the infection appear to be moving towards any area of the British zone.

It is not generally realized that amongst the multitudinous tasks of the Veterinary and Remounts Section is the work of supervizing abattoirs and the operation of "economizers." At the former the pancreas glands of all animals are removed to help in the manufacture of insulin. The latter is a perfect example of Teutonic thoroughness and forms a part of the German veterinary organization which illustrates to the full the German's capacity for making the most out of everything and wasting nothing.

When cattle die from any disease which makes them unfit for human consumption, instead of being burned or buried they are removed to the nearest economizer. There they are roughly dissected and the various segments are placed in large boilers to undergo a remarkable process whereby every piece of the animal eventually serves some useful purpose. Fats obtained by this means go towards the making of soaps, boot polish and similar articles; solids are ground to make animal foods and bones become bone meal and bone manure. By means of the economizer it is assured that no part of any animal which dies or is killed in Germany is wasted. Such economizers have long been a small but important cog in the German economic machine. They were organized on a State basis, there being one for each area, and it was—and still is—the duty of every German to ensure that carcases of every type of animal from a kitchen cat to a draught horse, if not required for any specific purpose, must be sent to the local economizer, the supply of coal for which has become an important but little known priority in the present coal crisis.

In a similar category is the work of supervizing the "Freibank" process by means of which second class meat, judged unsuitable for human consumption in England, is sterilized before being tinned. This is not a post-war development for the Freibank system was in use in Germany both before and during the war. It provides, however, a further interesting sidelight on German food economy measures and in the present food shortage provides a valuable contribution to the limited supplies available.

During the occupation several interesting items of veterinary equipment have come to light, some of which have been sent to England for testing. One such article not sent to England, but the manufacture of which in the British zone has now been stopped, was a particularly vicious gag designed to break the wildest horse.

A considerable part of the Veterinary and Remounts Section's time is also taken in investigating the claims of inventors who range from the man with the world's most perfect horseshoe (found on investigation to possess a regrettable number of imperfections) to the gentleman who wants to give cows violet ray treatment to increase the milk yield.

More important and pressing is the work of increasing supplies of drugs and instruments and getting factories working again to this end. It is unfortunate that in the days immediately following the end of the war much valuable, and at present irreplaceable, veterinary equipment was destroyed by displaced persons.

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MINISTRY OF AGRICULTURE NEWS SERVICE

Taking Out a T.T. Licence.—It has happened that a farmer wishing to change to T.T. milk production has had his herd tuberculin tested, and the result has been favourable enough to encourage him to go ahead. On applying to the County Council for a T.T. licence, however, he finds that he cannot be granted a licence because his buildings are not up to requirements.

Any farmer who is contemplating making the changeover should first contact the County Council (or the County Borough Council if his farm is in a County Borough) and enquire as to what adjustments (if any) of his buildings would be necessary and generally as to the conditions governing the granting of T.T. licences. As regards the health of the herd, the conditions require that he must furnish the Council with a veterinary surgeon's certificate of an examination and also of a tuberculin test of the herd, carried out not more than one month before the date of application for licence. Any reactors to the test must have been removed from the herd. No test is necessary in the case of an attested herd for which a T.T. licence is asked.

It should be remembered that one of the requirements of a T.T. licence is that the herd must be completely isolated from all other cattle. This means that the fences must be maintained in such a condition as to prevent the infection of the T.T. herd by cattle on the adjoining land.

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Boil that Swill.—Swill, unless it is properly handled and treated, is a real menace to the health of farm livestock. If the necessary precautions are disregarded, the result may be an outbreak of foot-and-mouth disease, with all the loss to the stock-owner which that entails.

Yet it is possible, with care, to make swill a perfectly safe feeding-stuff. It must be boiled thoroughly for at least an hour (this is, in fact, a legal requirement) and it must be protected from reinfection after boiling. Nothing should be added to the boiled swill, nor should it be placed in containers which are used for the raw material unless, since being so used, they have been thoroughly sterilized. Further, the conveyance of infection to animals on the hands, boots or clothes of the workers who handle the raw swill should be carefully guarded against.

Others have learned, to their cost, the dangers inherent in the use of swill, so *do not on any account let your animals have any contact with swill until it has been boiled.*

* * * * *

According to reports from Australia the position of the horse-breeding industry in that Dominion is causing some anxiety to those interested in it; and at recent meetings of both the South Australian and New South Wales branches of the Commonwealth Clydesdale Horse Society it was decided to petition the State Governments with a view to obtaining financial assistance. The President of the South Australian branch said that breeders in that State were very much concerned about the decline in the production of foals, and he emphasised the necessity for immediate steps to be taken to remedy the position. With that end in view, and with the support of the Chamber of Rural Industries, a deputation from the Society waited on the Minister for Agriculture and urged him that, in order to encourage horse breeding, immediate consideration should be given to the question of subsidising foals born in 1946 and 1947.—*Scottish Farmer.*

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SCHEME FOR THE CONTROL OF DISEASES OF DAIRY CATTLE

STATEMENT SHOWING THE NUMBER OF UNDERTAKINGS NOTIFIED TO THE MINISTRY OF AGRICULTURE DURING THE MONTH ENDED MAY 31ST, 1946

County	Undertakings Notified		Total Undertakings		
	During Month	Previously	Number	Number of Cattle	
				Cows	Heifers
ENGLAND					
Bedford	—	34	34	773	431
Berks	—	85	85	3,121	2,049
Bucks	1	79	80	2,730	1,479
Cambridge	—	10	10	190	79
Chester	1	328	329	10,932	4,323
Cornwall	—	4	4	72	75
Cumberland	—	57	57	1,454	1,226
Derby	3	314	317	9,029	5,144
Devon	—	309	309	4,560	2,648
Dorset	—	66	66	2,078	1,124
Durham	—	255	255	5,441	2,287
Essex	1	212	213	7,136	4,326
Gloucester	3	92	95	2,541	1,821
Hampshire	1	370	371	10,704	7,171
Hereford	—	16	16	347	201
Hertford	—	80	80	2,362	1,554
Hunts	—	7	7	280	168
Isle of Ely	—	1	1	57	21
Isle of Wight	—	9	9	171	94
Kent	—	155	155	3,645	2,210
Lancs	—	168	168	4,913	1,858
Leics	—	100	100	2,511	1,904
Lincs (Holland)	—	3	3	25	11
Lincs (Kesteven)	—	23	23	321	192
Lincs (Lindsey)	—	102	102	1,975	1,196
Middlesex	—	13	13	419	219
Norfolk	—	132	132	4,268	3,012
Northants	—	72	72	2,129	1,812
Northumberland	—	51	51	1,603	1,141
Notts	—	163	163	3,609	2,233
Oxford	1	42	43	1,214	1,916
Rutland	—	8	8	156	107
Salop	1	219	220	6,397	3,416
Soke of Peterborough	—	—	—	—	—
Somerset	2	253	255	6,725	3,143
Staffs	—	174	174	4,184	3,427
Suffolk, E.	—	56	56	1,233	857
Suffolk, W.	—	48	48	1,002	725
Surrey	—	96	96	2,763	1,323
Sussex, E.	1	161	162	4,060	2,566
Sussex, W.	—	115	115	3,325	1,916
Warwick	—	121	121	2,738	1,917
Westmorland	1	7	8	198	191
Wilts	—	84	84	3,395	1,576
Worcester	1	147	148	2,882	1,531
Yorks, E.R.	—	98	98	1,532	946
Yorks, N.R.	—	110	110	3,388	236
Yorks, W.R.	3	235	238	5,711	2,325
WALES					
Anglesey	—	49	49	843	600
Brecon	—	12	12	204	129
Caernarvon	1	110	111	1,768	974
Cardigan	2	35	37	679	447
Carmarthen	4	228	232	4,833	2,278
Denbigh	—	32	32	738	335
Flint	—	44	44	1,002	566
Glamorgan	—	95	95	1,534	678
Merioneth	—	10	10	137	65
Monmouth	—	53	53	1,241	688
Montgomery	—	14	14	283	248
Pembroke	1	39	40	845	707
Radnor	—	—	—	—	—
TOTALS	28	6,005	6,033	153,909	87,833

Notes.—(1) Operative periods of undertakings: 1 year, 1,630; 2 years, 472; 3 years, 4,031. (2) Undertakings renewed for further periods: 1 year, 1,928; 2 years, 223; 3 years, 765. (3) Undertakings not renewed at end of operative periods, 1,862. (4) The figures showing the number of undertakings notified during the month relate to entirely fresh undertakings and do not include undertakings renewed for further periods. Undertakings which have been cancelled, or not renewed, are not included in the figures for previous notifications.

County	Undertakings Notified		Total Undertakings		
	During Month	Previously	Number	Number of Cattle	
				Cows	Heifers
SCOTLAND					
Aberdeen	—	20	20	986	448
Angus	—	17	17	654	428
Argyll	—	2	2	33	74
Ayr	—	15	15	475	280
Banff	—	1	1	120	20
Berwick	—	1	1	20	—
Bute	—	—	—	—	—
Caithness	—	—	—	—	—
Clackmannan	—	5	5	191	114
Dumfries	—	9	9	479	468
Dunbarton	—	1	1	60	40
East Lothian	—	1	1	20	8
Fife	—	27	27	959	516
Inverness	—	2	2	106	46
Kincardine	1	1	2	36	28
Kinross	—	3	3	62	43
Kirkcudbright	—	9	9	572	333
Lanark	—	3	3	107	98
Midlothian	—	—	—	—	—
Moray	—	—	—	—	—
Nairn	—	—	—	—	—
Orkney	—	—	—	—	—
Peebles	—	—	—	—	—
Perth	—	9	9	292	225
Renfrew	—	4	4	151	101
Ross-shire	—	—	—	—	—
Roxburgh	—	—	—	—	—
Selkirk	—	—	—	—	—
Stirling	—	9	9	293	277
Sutherland	—	4	4	74	29
West Lothian	—	—	—	—	—
Wigtown	—	7	7	359	170
Zetland	—	—	—	—	—
TOTALS	1	150	151	6,049	3,746

Notes.—(1) Duration of undertakings: 1 year, 45; 2 years, 7; 3 years, 99. (2) Undertakings renewed for a further period (included in column 2 of statement): 1 year, 80; 2 years, 7; 3 years, 51. (3) Undertakings expired and not renewed (not included in column 2 of statement): 240. (4) The figures showing the number of undertakings notified during the month relate to entirely fresh undertakings.

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TYPES OF TUBERCLE BACILLI IN ANIMALS

In a report to the Academy of Medicine (France), Professor Jean Verge of the Alfort Faculty makes some startling revelations on the types of *Mycobacterium tuberculosis* and relative occurrences in horses, cattle, hogs, dogs, and cats, noting that the role played by the human type in animals has not been critically investigated. The findings are both paradoxical and new, according to the published report (*Rev. Patth. Comp. et Hyg. Gén.* **45** (September-October, 1945): 313-316). A remarkable disclosure of the author's personal research is that the human type was responsible for 100 per cent. of the canine cases; the bovine type was found in 100 per cent. of the feline cases, duly typed according to standard laboratory methods. Out of 16 hogs, 12 were of the bovine type and four atypical. In three horses one was the human type and two the bovine type; in 37 chickens all were avian.

The author tabulates the findings of others as follows:—

Species	*Number*	*Human type*	*Bovine type*	*Atypical*	*Avian type*
Horse	112	11	90	1	10
Sheep	270	1	269	—	—
Goat	54	1	52	—	1
Hog	3,416	98	1,196	63	2,001
Dog	606	392	200	14	12
Cat	132	6	126	—	—

The high incidence of human tuberculosis in dogs is explainable by close human association and eating habits. Cadiot and Deuville mention the frequence of tuberculosis in restaurant and café dogs through voluntarily lapping sputum from the floor. Canine tuberculosis is often "open": lung cavities, bronchiectasis, intestinal ulcers and cutaneous. The tuberculous dog, in view of these facts, is a peril, especially to children, of whom they are precious companions. They spread infected material over exterior mediums and should be subjected to severe prophylactic measures, that is, sacrificed.—*J. Amer. vet. med. Ass.*

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Mr. Frank Weate, of Wheaton Aston, who has killed thousands of pigs, had a new experience when he found that a pig he killed had no brains at all. It was an 18-month-old large white sow, which had already had one litter. "She was a most sensible sow, too," he said, "and would come for her food in the normal way."—*Meat Trades Journal.*

"A JUNGLE APPENDICECTOMY"

An operation, the subject of which was a veterinarian ("Captain MacL. of Edinburgh"), carried out successfully under remarkable circumstances, is recorded by Flight-Lieutenant N. M. Kater, of the R.A.A.F., in the March 30th issue of *The Medical Journal of Australia.*

When Captain MacL., on the occasion of a second escape from the hands of the Japanese, had reached Resa, on the south coast of Mindanao, he had an attack of appendicitis, the pain becoming localized in the right iliac fossa. He endured it for nine days and then decided that an operation was imperative. Captain MacL. had with him a Filipino doctor, who had graduated at the Manila University just before war broke out, but who had never performed an operation of any sort. This doctor agreed after much persuasion to perform the operation under the direction of the patient.

The operating theatre was a native house made of *atap.* The instruments consisted of one pair of scissors, one scalpel, one pair of forceps, one curved needle and two spoons bent to form retractors. The suture material consisted of fibre from the *abaca,* which is similar to the banana palm. The instruments were boiled; the suture material could not be. There was no anaesthetic agent of any kind, and the patient held a mirror in such a position as would enable him to direct operations. Four and a half hours were required for the operation; the appendix was adherent to the peritoneum and had a perforation at the distal end.

The wound healed well. On the fifth day the Japanese arrived and patient and doctor had to "run for it." The wound stood the strain and convalescence was uneventful: our stoic and self-reliant colleague has, it appears, since been in the fighting in Borneo.

* * * * *

The rapid recovery of Holland's livestock is reflected in statistics released recently by the Dutch Central Statistical Bureau. The number of young cattle at the moment is greater than it was in 1939, but the total figure for cattle of all ages is still considerably below the 1939 level. In December, 1941, Holland's cattle herds numbered some 2,421,000 head, a figure which decreased to 1,869,000 by the end of December, 1942, rising again to 1,939,000 in December, 1943. The most recent figure, for December, 1945, registers 2,182,000 head of cattle.—*Reuter.*

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Berkshire F.U. passed a Wantage resolution urging that owners of poisonous trees, such as yew, should be made responsible for fencing them against livestock and for the deaths of animals eating the trees.

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With funds raised by gymkhanas and horse shows, the Trustees of the Bursary Fund of Njoro Club, Kenya, have collected enough money to start awarding bursaries to Kenya boys and girls for higher education overseas.

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For the first time in its history the Pharmaceutical Society of Great Britain elected a woman, Mrs. Jean Kennedy Irvine, as Vice-President at its meeting in London on June 5th.

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Grants under the Colonial Development and Welfare Act, 1945, made to the Colonial Empire in April for development, welfare and research, totalled £546,434. Research grants include £9,500 for an experimental malaria control scheme in Kenya, £2,850 for research into hot-climate physiology in Nigeria and £23,700 for research into undulant fever in goats.

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal views of the writer only and must not be taken as expressing the opinion or having received the approval of the N.V.M.A.

Letters to the Editor should reach the Office not later than by the first post on Monday morning for insertion in following Saturday's issue.

Notice to Correspondents

The Editorial Committee regrets that, the paper supply situation having deteriorated, it has become necessary to ask correspondents again to accept a limitation on the length of letters submitted for publication. Accordingly, contributors to our Correspondence Columns are requested to note that, until further intimation is made, their communications must not exceed 350 words.

* * * * *

SHORTAGE OF MOTOR TRANSPORT

Sir,—Two things have been discussed at great length, the shortage of veterinary surgeons and the necessity for better veterinary education. The immediate urgency is neither of these, but a desperate lack of transport. I have six cars in my practice all built in 1938 or 1939, and it is urgently necessary to replace them following seven or eight years of constant hard work.

Agriculture is of primary importance to-day and if we are to do our work we must have motor cars made available. I therefore ask that the N.V.M.A. make immediate representations direct to the Minister urging the vital importance of this matter.

My position must be one of many, which only adds to the seriousness of this state of affairs. It is cold comfort to read in the Press of the thousands of cars sold for export when work essential to this country's needs is held up for sheer lack of transport.

Yours faithfully,
F. Beckett.

Berkeley Lodge, Blandford, Dorset.

June 1st, 1946.

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RESOURCES OF THE PROFESSION FOR SPECIALIZED WORK

Sir,—Mr. Harbour in his very interesting letter of April 4th in your April 13th number gives a more comprehensive account of the activities of the research which is being carried out under the aegis of the various colleges of agriculture in Scotland than that which I quoted in my original letter. While I was not aware what veterinary officers were attached to the scheme, I was aware that at least one existed, the North of Scotland College man. That is not my point and I suggest that what is fundamental is that the primary and vital problem is one of animal disease and it is surely clear that the direction and control of the scheme should be under qualified veterinarians and not under the colleges of agriculture. Why is such a scheme not under the control of the veterinary colleges? In the teams which Mr. Harbour describes, surely the leaders should be those specially trained in the basic problem, animal disease? Are they, I ask? If not, why not? Mr. Harbour's picture shows the incidence and losses from various pathological conditions of animals, but he evades the heart of the matter which is, who is the directing and controlling influence of a scheme which has been stimulated by losses from animal disease? Is the veterinarian at the top or is he being directed by laymen in a highly specialized pathological problem? That is a matter which ought to be known to the profession and if the veterinarian is not the directing power then action should be taken by the profession to amend this omission.

Yours faithfully,
J. L. Stewart.

Department of Animal Health,
Pong-Tamale,
P.O. Box 32, Tamale, N. Ts.

May 22nd, 1946.

DISEASES OF ANIMALS ACTS, 1894 TO 1937, AND AGRICULTURE ACT, 1937 (PART IV).

Summary of Returns of Confirmed Outbreaks of Scheduled (Notifiable) Diseases

Period	Anthrax	Foot-and-mouth	Parasitic Mange•	Sheep Scab	Swine Fever
May 1st to 15th, 1946 ...	3	1	—	—	20
Corresponding period in—					
1945 ...	1	3	—	—	43
1944 ...	8	—	—	—	52
1943 ...	16	—	—	3	15
Total Jan. 1st to May 15th, 1946 ...	44	23	4	34	238
Corresponding period in—					
1945 ...	44	76	5	37	418
1944 ...	94	19	5	58	266
1943 ...	134	10	5	97	203

Note.—The figures for the current year are approximate only.
• Excluding outbreaks in Army Horses.